

What is claimed is:

1           1. A data broadcast receiving apparatus for receiving  
2 broadcast data that includes a plurality of data modules which  
3 are linked by link information, comprising:

4           module storing means for selectively storing data modules  
5 included in the received broadcast data;

6           user indication accepting means for accepting an indication  
7 from a user; and

8           reproducing means for

9           (a) judging whether a target data module which is specified  
10 in accordance with the user indication and the link information  
11 is stored in the module storing means,

12           (b) when the target data module is stored in the module  
13 storing means, reading the target data module from the module  
14 storing means, and reproducing and outputting the read target  
15 data module, and

16           (c) when the target data module is not stored in the module  
17 storing means, outputting first information for informing the  
18 user that the target data module is not stored.

1           2. The data broadcast receiving apparatus of Claim 1,

2           wherein the reproducing means includes:

3 a judging unit for judging whether the target data module is  
4 stored in the module storing means; and

5 an informing unit for outputting the first information when  
6 the target data module is not stored in the module storing  
7 means.

1 3. The data broadcast receiving apparatus of Claim 2, further  
comprising

2 storage information storing means for storing storage  
3 information for each of the plurality of data modules included in  
4 the broadcast data, the storage information showing whether the  
5 data module is stored in the module storing means,

6 wherein the judging unit refers to storage information of the  
7 target data module in the storage information storing means, to  
8 judge whether the target data module is stored in the module  
9 storing means.  
10

1 4. The data broadcast receiving apparatus of Claim 3,

2 wherein when the target data module is included in the  
3 broadcast data but is not stored in the module storing means,

4 the storage information of the target data module shows that  
5 the target data module is not stored in the module storing means,

6 and further shows a problem because of which the target data  
7 module is not stored, and

8 the informing unit refers to the storage information of the  
9 target data module in the storage information storing means, and  
10 outputs second information for informing the user of the problem,  
11 together with the first information.

5. The data broadcast receiving apparatus of Claim 4,  
wherein the informing unit outputs third information for  
suggesting a solution for the problem to the user, together with  
the first information and the second information.

6. The data broadcast receiving apparatus of Claim 5, further  
comprising:

3 user instruction accepting means for accepting an instruction  
4 from the user to implement the solution; and

5 solution implementing means for implementing the solution in  
6 accordance with the user instruction accepted by the user  
7 instruction accepting means.

1 7. The data broadcast receiving apparatus of Claim 2,  
2 wherein each of the plurality of data modules is made up of

3 at least one set of resource information, and

4 the judging unit judges whether all sets of resource  
5 information that make up the target data module are stored in the  
6 module storing means, in order to judge whether the target data  
7 module is stored in the module storing means,

8 wherein when any of the sets of resource information of the  
9 target data module is not stored in the module storing means,

10 the informing unit outputs the first information for  
11 informing the user that the set of resource information is not  
12 stored in the module storing means, and

13 the reproducing means reads the other sets of resource  
14 information of the target data module from the module storing  
15 means, and reproduces and outputs the other sets of resource  
16 information.

1 8. A data broadcast receiving apparatus for receiving  
2 broadcast data that includes a plurality of data modules which  
3 are linked by link information, comprising:

4 module storing means for selectively storing data modules  
5 included in the received broadcast data;

6 user indication accepting means for accepting an indication  
7 from a user; and

8 reproducing means for

9 (a) reading a target data module which is specified in  
10 accordance with the user indication and the link destination,  
11 from the module storing means, and reproducing and outputting the  
12 read target data module,

13 (b) specifying, prior to the reproduction of the target data  
14 module, data modules which are link destinations of the target  
15 data module and therefore may be indicated by the user as the  
16 next target data module, with reference to the link  
17 information,

18 (c) judging whether the link destination data modules of the  
19 target data module are all stored in the module storing means,  
20 and

21 (d) when any of the link destination data modules of the  
22 target data module is not stored in the module storing means,  
23 informing the user that the link destination data module is not  
24 stored.

1 9. The data broadcast receiving apparatus of Claim 8,

2 wherein the reproducing means includes:

3 a judging unit for specifying the link destination data  
4 modules of the target data module with reference to the link

5 information, and judging whether the link destination data  
6 modules are all stored in the module storing means; and

7 an informing unit for informing, when any of the link  
8 destination data modules is not stored in the module storing  
9 means, the user that the link destination data module is not  
10 stored.

11 10. The data broadcast receiving apparatus of Claim 9,  
12 wherein the target data module includes display objects  
13 corresponding to the link destination data modules, and

14 the informing unit informs the user that the link destination  
15 data module is not stored, by displaying a display object  
16 corresponding to the link destination data module which is not  
17 stored, in a different manner from the other display objects  
18 corresponding to link destination data modules which are  
19 stored.

20 11. The data broadcast receiving apparatus of Claim 9,  
21 wherein the target data module includes display objects  
22 corresponding to the link destination data modules, and

23 the informing unit informs the user that the link destination  
24 data module is not stored, by not displaying a display object  
25

6 corresponding to the link destination data module which is not  
7 stored.

1 12. The data broadcast receiving apparatus of Claim 9,  
2 wherein the target data module includes display objects  
3 corresponding to the link destination data modules, and  
4 the informing unit informs the user that the link destination  
5 data module is not stored, by flashing a display object  
6 corresponding to the link destination data module which is not  
7 stored, on and off.

1 13. The data broadcast receiving apparatus of Claim 9,  
2 wherein the informing unit informs the user that the link  
3 destination data module is not stored, by means of voice  
4 output.

1 14. A data broadcast receiving method for use in an apparatus  
2 for receiving broadcast data that includes a plurality of data  
3 modules which are linked by link information, the apparatus  
4 including a storage unit, the data broadcast receiving method  
5 comprising:

6 a module storing step for selectively storing data modules

7 included in the received broadcast data, into the storage unit;  
8 a user indication accepting step for accepting an indication  
9 from a user; and  
10 a reproducing step for

11 (a) judging whether a target data module which is specified  
12 in accordance with the user indication and the link information  
13 is stored in the storage unit,

14 (b) when the target data module is stored in the storage  
15 unit, reading the target data module from the storage unit, and  
16 reproducing and outputting the read target data module, and

17 (c) when the target data module is not stored in the storage  
18 unit, outputting first information for informing the user that  
19 the target data module is not stored.

20  
1 15. A data broadcast receiving method for use in an apparatus  
2 for receiving broadcast data that includes a plurality of data  
3 modules which are linked by link information, the apparatus  
4 including a storage unit, the data broadcast receiving method  
5 comprising:

6 a module storing step for selectively storing data modules  
7 included in the received broadcast data, into the storage unit;

8 a user indication accepting step for accepting an indication



9 from a user; and

10 a reproducing step for

11 (a) reading a target data module which is specified in  
12 accordance with the user indication and the link destination,  
13 from the storage unit, and reproducing and outputting the read  
14 target data module,

15 (b) specifying, prior to the reproduction of the target data  
16 module, data modules which are link destinations of the target  
17 data module and therefore may be indicated by the user as the  
18 next target data module, with reference to the link  
19 information,

20 (c) judging whether the link destination data modules of the  
21 target data module are all stored in the storage unit, and

22 (d) when any of the link destination data modules of the  
23 target data module is not stored in the storage unit, informing  
24 the user that the link destination data module is not stored.

1 16. The data broadcast receiving method of Claim 15,

2 wherein the reproducing step includes:

3 a judging substep for specifying the link destination data  
4 modules of the target data module with reference to the link  
5 information, and judging whether the link destination data

6 modules are all stored in the storage unit; and

7 an informing substep for informing, when any of the link  
8 destination data modules is not stored in the storage unit, the  
9 user that the link destination data module is not stored.

1 17. The data broadcast receiving method of Claim 16,

2 wherein the target data module includes display objects  
corresponding to the link destination data modules, and

the informing substep informs the user that the link  
destination data module is not stored, by displaying a display  
object corresponding to the link destination data module which is  
not stored, in a different manner from the other display objects  
corresponding to link destination data modules which are  
stored.

1 18. The data broadcast receiving method of Claim 16,

2 wherein the target data module includes display objects  
3 corresponding to the link destination data modules, and

4 the informing substep informs the user that the link  
5 destination data module is not stored, by not displaying a  
6 display object corresponding to the link destination data module  
7 which is not stored.

1           19. The data broadcast receiving method of Claim 16,  
2           wherein the target data module includes display objects  
3           corresponding to the link destination data modules, and  
4           the informing substep informs the user that the link  
5           destination data module is not stored, by flashing a display  
6           object corresponding to the link destination data module which is  
7           not stored, on and off.

8           20. The data broadcast receiving method of Claim 16,  
9           wherein the informing substep informs the user that the link  
10          destination data module is not stored, by means of voice  
11          output.

12          21. A computer-readable recording medium recording a program  
13          for use in an apparatus for receiving broadcast data that  
14          includes a plurality of data modules which are linked by link  
15          information, the apparatus including a storage unit, the program  
16          comprising:

17           a module storing step for selectively storing data modules  
18           included in the received broadcast data, into the storage unit;

19           a user indication accepting step for accepting an indication

9 from a user; and

10 a reproducing step for

11 (a) judging whether a target data module which is specified  
12 in accordance with the user indication and the link information  
13 is stored in the storage unit,

14 (b) when the target data module is stored in the storage  
15 unit, reading the target data module from the storage unit, and  
16 reproducing and outputting the read target data module, and

17 (c) when the target data module is not stored in the storage  
18 unit, outputting first information for informing the user that  
19 the target data module is not stored.

20  
21  
22. A computer-readable recording medium recording a program  
23 for use in an apparatus for receiving broadcast data that  
24 includes a plurality of data modules which are linked by link  
25 information, the apparatus including a storage unit, the program  
26 comprising:

27 a module storing step for selectively storing data modules  
28 included in the received broadcast data, into the storage unit;

29 a user indication accepting step for accepting an indication  
30 from a user; and

31 a reproducing step for

11 (a) reading a target data module which is specified in  
12 accordance with the user indication and the link destination,  
13 from the storage unit, and reproducing and outputting the read  
14 target data module,

15 (b) specifying, prior to the reproduction of the target data  
16 module, data modules which are link destinations of the target  
17 data module and therefore may be indicated by the user as the  
18 next target data module, with reference to the link  
19 information,

20 (c) judging whether the link destination data modules of the  
21 target data module are all stored in the storage unit, and

22 (d) when any of the link destination data modules of the  
23 target data module is not stored in the storage unit, informing  
24 the user that the link destination data module is not stored.